

# **Draft Criteria for Bottled Water Program Cessation, Domestic Well Monitoring Program Cessation, Groundwater Monitoring Well Optimization, and Groundwater Interim Actions**

## **Introduction**

The following three groundwater-related items associated with the Anaconda Copper Mine Site (ACMS) in Yerington, Nevada will be addressed during the finalization of the OU1/Groundwater Remedial Investigation Report (OU1 RI) and initiation of the OU-1 Risk Assessment:

1. Cessation of Bottled Water Delivery Program and Domestic Well Monitoring Program
2. Groundwater Monitoring Well Optimization
3. Groundwater Interim Measures

Upon completion of groundwater characterization and reporting associated with ACMS, decisions will be made related to these items. Criteria must be established to form the basis of these decisions. The Nevada Division of Environmental Protection (NDEP) will present these proposed criteria to, and discuss with, stakeholders and the public in June, 2019. Then, concurrent with the finalization of the OU1 RI, decisions on these items will be made by NDEP in the second half of 2019.

## **Bottled Water Program**

### **Reason for the Bottled Water Program**

The Bottle Water Program was implemented as a precautionary interim measure where groundwater from individual domestic wells was being used as drinking water, and initial sampling detected uranium above the eligibility threshold of 25 ug/L (equivalent to parts per billion). The maximum contaminant level (MCL) for uranium is 30 ug/L. The Bottled Water Program was initiated out of an abundance of caution when delineation of the mine-impacted groundwater plume had just begun, and without specific information to whether uranium concentrations at any location were attributable to releases from the ACMS or from other sources.

### **Alternatives to Bottled Water**

Alternative sources of drinking water are available for much of the area where bottled water recipients now reside. These alternative sources include extended water lines from the City of Yerington drinking water system and Yerington Paiute Tribe drinking water system.

### **Proposed Bottled Water Elimination Criteria**

1. Is the residence currently connected to a municipal, community, or tribal water system and is the system operational?

If yes, eliminate bottled water service.

2. Does the residence currently have access to the above-mentioned water systems, but is not currently connected?

If yes, connect to the water system and eliminate bottled water service. If access is available, but homeowner chooses to refuse connection, they will no longer be eligible for bottled water service.

3. Is the domestic well within the currently identified mine-impacted plume, but does not have access to the above-mentioned water systems AND water from the domestic well has been demonstrated to have one of the following:

Uranium levels greater than 25 µg/L (83% of MCL).

If yes, continue bottled water service.

### **Domestic Well Monitoring Program**

#### **Reason for the Domestic Well Monitoring Program**

The Domestic Well Monitoring Program (DWMP) was implemented for similar reasons as the Bottled Water Program, as stated above. It was primarily focused on obtaining data to help understand the risks that could result from drinking water from those wells. As more information was collected and analyzed, alternative drinking water supplies were made available, and the number of wells in the DWMP reduced to the current 11 wells.

#### **Cessation of Domestic Well Monitoring Program**

Similar to the Bottled Water Program, alternative sources of drinking water are available for much of the area where domestic wells exist. These alternative sources include extended water lines from the City of Yerington drinking water system and Yerington Paiute Tribe drinking water system. For residential private wells that have not yet connected to one of the two systems above, the owners will be given additional opportunities to connect to one of those systems, and agree to not use their domestic wells for drinking water (they will be able to use the water for non-potable uses). Even with cessation of the DWMP, the ACMS Groundwater Monitoring Program will continue to provide data and information that is needed for long-term monitoring of groundwater conditions within the boundary of the mine site and north of the mine site.

### **Groundwater Monitoring Optimization**

#### **Objective of Current Groundwater Monitoring Network and Program**

The current groundwater monitoring network includes 350 wells that are sampled either quarterly or semi-annually for up to 68 analytes and monthly for depth. This monitoring and sampling program was developed by the EPA and ARC and has not been altered since deferral.

The objective of the current program was to collect adequate and sufficient data to support the OU-1 RI and provide data for risk assessment. That objective is deemed essentially complete.

### **Objective of Optimized Groundwater Monitoring Network and Program**

Optimization of the groundwater monitoring program is a requirement of the Interim Administrative Settlement Agreement and Order on Consent (IAOC). As stated in the IAOC, the objective of optimization is to reduce the groundwater monitoring network (number of wells, frequency and/or specific analytes) to an essential monitoring program that addresses the stated goals. The goals of the optimized groundwater monitoring program are to collect sufficient data to allow for evaluation and determination of plume stability for key analytes, particularly on site and along predominant groundwater flow paths at all aquifer depths north of the ACMS. In addition to monitoring the mine-impacted groundwater plume, the optimized program will also focus on continued data collection at specific wells in agricultural-influenced groundwater areas and geothermal groundwater areas. A secondary goal of the optimized program will be to further delineate the various chemicals of interest (COI) sources. The goals may require the installation of new wells to ensure the information that is most needed is available.

### **Process for Developing the Optimized Groundwater Monitoring Program**

1. ARC will draft a detailed optimization plan via a tech memo that will be submitted to NDEP and stakeholders for review and comments in the September 2019 timeframe.
2. NDEP will provide comments and direction to ARC for finalizing the tech memo and initiating the optimization process in the October 2019 timeframe.
3. Criteria for consideration during development of the Optimized Program include:
  - a. Results of Monitoring and Remediation Optimization System software analysis
  - b. Distance from mine site
  - c. Location of well in relation to the plume, i.e. cross gradient or up gradient
  - d. The monitor well that has no more than 5% of all analytes exceeding the local background groundwater quality standard or no analytes exceed the drinking water MCL, whichever is lower, can be eliminated.
  - e. An analyte could also be eliminated if that analyte is not detected above appropriate reporting limits for the most recent eight consecutive sampling events. A minimum of eight samples are required. (Does not apply to radionuclides currently included in the analyte set, as it appears the reporting limits change dramatically between sampling events).

### **Groundwater Interim Actions**

#### **Summary of Legal and Regulatory Enforcement**

ACMS IAOC Criteria – The IAOC establishing actions for the ACMS remedial activities (Section VIII. D) authorizes NDEP to require groundwater interim measures if it determines from

information collected during the Remedial Investigation and Feasibility Study that releases of hazardous substances from the mine site to groundwater pose an imminent and substantial endangerment to human health or the environment.

### **Previous and Current Groundwater Interim Actions**

There are several actions which have been implemented with respect to groundwater in the last 10 years or are planned in next few years. While these actions are not formally considered “Groundwater Interim Actions”, they have positively contributed to addressing concerns related to groundwater impact in the Mason Valley and Yerington vicinity. These actions include:

1. Extension of the City of Yerington Municipal Water System – this extension has effectively addressed the groundwater exposure pathway for the majority of residences north of the ACMS.
2. Decommissioning of irrigation water supply wells, which in effect has reduced the northward migration of mine contaminants north of the ACMS.

### **Criteria for Determining Need for Further Groundwater Interim Actions**

If NDEP determines through evaluation of monitoring well data that the plume containing mine-related COIs is no longer stable or approaching drinking water supplies or in other ways increasing risk to human health or the environment, NDEP may require ARC to implement further groundwater interim actions.